FORM PTO-1390 (REV 10-94)	U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		11027.26USWO
		U S APPLICATION NO (If known, see 37 C F R 1 5) unknown 10/018008

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/FR00/01468	29 May 2000	15 June 1999

TITLE OF INVENTION

CARDBOARD CASE AND BLANK WITH TEAR-OFF WALL (AS AMENDED)

APPLICANT(S) FOR DO/EO/US

BACQUES et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. [ ] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. [X] This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(l).
4. [X] A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. [X] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [X] is transmitted herewith (required only if not transmitted by the International Bureau).
   b. [X] has been transmitted by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US)
6. [X] A translation of the International Application into English (35 U.S.C. 371(c)(2)).

7. [X] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [ ] have been transmitted by the International Bureau.
   c. [ ] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [X] have not been made and will not be made.

8. [ ] A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).

9. [X] An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).

10. [X] A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. [ ] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. [X] An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. [X] A FIRST preliminary amendment.
    [ ] A SECOND of SUBSEQUENT preliminary amendment.

14. [ ] A substitute specification.

15. [ ] A change of power of attorney and/or address letter.

16. [X] Other items or information: International Publication Page, Marked-up Copy, Abstract, From PCT/ISA/210, Form PCT/IPEA/409 with annexes: Amended Sheets 1 and 24-31, Verification of Translation of PCT/FR00/01468, Verification of Translation of amended sheets, 8 Sheets of Drawing Pages

U.S. APPLICATION NO (If known, see 37 C F R 1 5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
unknown 10/018008	PCT/FR00/01468	unknown

17. [X] The following fees are submitted:

CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492(a) (1)-(5)):

Search Report has been prepared by the EPO or JPO **$890.00**

International preliminary examination fee paid to USPTO (37 CFR 1.492(a)(1)) **$710.00**

No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) **$740.00**

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(3)) paid to USPTO **$1040.00**

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) **$100.00**

ENTER APPROPRIATE BASIC FEE AMOUNT =	**$890.00**	
Surcharge of **$130.00** for furnishing the oath or declaration later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	**$**	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	24 -20 =	4	X **$18.00**	**$72.00**	
Independent claims	2 -3 =	0	X **$84.00**	**$0.00**	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$260.00**	**$**	

TOTAL OF ABOVE CALCULATIONS =	**$962.00**	
Reduction by 1/2 for filing by small entity, if applicable. Small entity status is claimed pursuant to 37 CFR 1.27	**$**	
SUBTOTAL =	**$962.00**	
Processing fee of **$130.00** for furnishing the English translation later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(f). +	**$**	
TOTAL NATIONAL FEE =	**$962.00**	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40.00 per property +	**$**	
TOTAL FEES ENCLOSED =	**$962.00**	
	Amount to be: refunded	**$**
	charged	**$**

a. [X] Check(s) in the amount of $962.00 to cover the above fees is enclosed.

b. [ ] Please charge my Deposit Account No. _____ in the amount of $ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 13-2725.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO
John J. Gresens
MERCHANT & GOULD
P.O. Box 2903
Minneapolis, MN 55402-0903

SIGNATURE: John J. Gresens

NAME: John J. Gresens

REGISTRATION NUMBER: 33,112

S/N unknown PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	BACQUES et al.	Serial No.:	unknown
Filed:	concurrent herewith	Docket No.:	11027.26USWO
Title:	CARDBOARD CASE AND BLANK WITH TEAR-OFF WALL (AS AMENDED)		

CERTIFICATE UNDER 37 CFR 1.10
'Express Mail' mailing label number: EV037644220US
Date of Deposit: 11 December 2001
I hereby certify that this correspondence is being deposited with the United States Postal Service 'Express Mail Post Office To Addressee' service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C . 20231.

By: _____
Name: Chris Stordahl

PRELIMINARY AMENDMENT

Box PCT
Assistant Commissioner for Patents
Washington, D. C. 20231

Dear Sir:

In connection with the above-identified application filed herewith, please enter the following preliminary amendment, based on claims amended in prosecution of the international application and published in the International Preliminary Examination Report, a copy of which is enclosed herewith.

Please find enclosed Amended Sheets 1, 2, 2a, and 28-35, with amended page 1 and amended patent claims 1-24, which were amended according to Article 36, during the preliminary examination procedure dated 22 December 2000.

IN THE TITLE

Please amend the title from "CASE AND CARDBOARD BLANK WITH TEARAWAY WALL" TO --CARDBOARD CASE AND BLANK WITH TEAR-OFF WALL--.

IN THE ABSTRACT

Insert the attached Abstract page into the application as the last page thereof.

IN THE SPECIFICATION

A courtesy copy of the present specification is enclosed herewith. However, the World Intellectual Property Office (WIPO) copy should be relied upon if it is already in the U.S. Patent Office.

IN THE CLAIMS

Please amend claims 3, 4, 8-11, 14-16, 20, and 22-24 as follows:

3. (Amended) The case as claimed in claim 1, characterized in that, the wall of the case being formed by leaves and/or flaps of the blank, the precut frangible portions are cut along a line which is open with respect to the edge of the corresponding leaf and/or flap.

4. (Amended) The case as claimed in claim 1, characterized in that the wall opposite the first wall is secured to the bottom wall (3, 86) or to a flap (24, 64, 93) connected to the bottom all, via at least one precut frangible portion (33, 92) that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck manually simply by pulling.

8. (Amended) The case as claimed in claim 5, characterized in that the precut frangible portions (28', 29'; 35, 37) are situated on the same side as the first leaf (2) and in that each of the said side flaps (17', 18'; 17", 18") of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

9. (Amended) The case as claimed in claim 1, characterized in that the fourth join line (9, 85) is in the form of a cap astride the fold line (12) between the first wall and the top wall of the case.

10. (Amended) The case as claimed in claim 1, characterized in that the first wall and the opposite wall are associated with the hollowed-out part of the blank allowing a user top perform the tearing-off.

11. (Amended) The case as claimed in claim 1, characterized in that at least one precut join line forms a perforated line exhibiting cut portions of length D1 separated each from the next by attachment points of length D2, at least one of the length D1 and D2 varying along said perforated line.

14. (Amended) The case as claimed in claim 11, characterized in that the perforated line has a first region with cut portions of a first length D1 said to be a long length, so that the cut can be begun easily and a high tearing speed can be achieved, followed by a second region of length D1', shorted than D1, so as to obtain greater resistance to tearing.

15. (Amended) The case as claimed in claim 11, characterized in that the perforated line has a first region with tear points of a first length D2 said to be a short length, so that the cut can be begun easily and a high tear speed can be achieved, followed by a second region of length D2', longer that D2, so as to obtain greater resistance to tearing.

16. (Amended) The case as claimed in claim 11, characterized in that the perforated line comprises a third region having cut portions of a length D1" longer than D1'; and/or tear points of length D2" shorter than D2', so as to once again reduce the resistance to tearing.

20. (Amended) The blank as claimed in claim 17, characterized in that the fourth leaf (5; 66; 91) or the end flap of the second leaf comprise at least one precut frangible portion (33; 92).

22. (Amended) The blank as claims in claim 20, characterized in that the precut frangible portions (28', 29'; 35, 37) lie on the same side as the first leaf (2) and in that each of said side flaps (17', 18'; 17", 18") of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

23. (Amended) The blank as claimed in claim 17, characterized in that the fourth join line (15, 18) is in the form of a cap astride the fold line between the first leaf and the adjacent panel.

24. (Amended) The blank as claimed in claim 17, characterized in that the precut frangible portion (33, 92) of the fourth leaf (5, 91) and the precut fourth join line (15, 85) are each respectively associated with the hollowed-out part (16, 34) in the blank allowing grasping so that a user can perform tearing.

REMARKS

The above preliminary amendment is made to enter amendments made during prosecution of the International application, and to remove multiple dependencies from claims 3, 4, 8-11, 14-16, 20, and 22-24.

A new abstract page is supplied to conform to that appearing on the publication page of the WIPO application, but the new Abstract is typed on a separate page as required by U.S. practice.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Marked-up Copy".

Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at (612) 371.5265.

Respectfully submitted,

MERCHANT & GOULD P.C.
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Dated: 11 December 2001

By _____
John J. Gresens
Reg. No. 33,112

JJG:hjh

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3. The case as claimed in [any one of the preceding claims,] claim 1, characterized in that, the wall of the case being formed by leaves and/or flaps of the blank, the precut frangible portions are cut along a line which is open with respect to the edge of the corresponding leaf and/or flap.

4. The case as claimed in [any one of the preceding claims,] claim 1, characterized in that the wall opposite the first wall is secured to the bottom wall (3, 86) or to a flap (24, 64, 93) connected to the bottom all, via at least one precut frangible portion (33, 92) that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck manually simply by pulling.

8. The case as claimed in [any one of claims 5 to 7,] claim 5, characterized in that the precut frangible portions (28', 29'; 35, 37) are situated on the same side as the first leaf (2) and in that each of the said side flaps (17', 18'; 17", 18") of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

9. The case as claimed in [any one of the preceding claims,] claim 1, characterized in that the fourth join line (9, 85) is in the form of a cap astride the fold line (12) between the first wall and the top wall of the case.

10. The case as claimed in [any one of the preceding claims,] claim 1, characterized in that the first wall and the opposite wall are associated with the hollowed-out part of the blank allowing a user top perform the tearing-off.

11. The case as claimed in [any one of the preceding claims,] claim 1, characterized in that at least one precut join line forms a perforated line exhibiting cut portions of length D1 separated each from the next by attachment points of length D2, at least one of the length D1 and D2 varying along said perforated line.

14. The case as claimed in [any one of claims 11 to 13,] claim 11, characterized in that the perforated line has a first region with cut portions of a first length D1 said to be a long length, so that the cut can be begun easily and a high tearing speed can be achieved, followed by a second region of length D1', shorted than D1, so as to obtain greater resistance to tearing.

15. The case as claimed in [any one of claims 11 to 14,] claim 11, characterized in that the perforated line has a first region with tear points of a first length D2 said to be a short length, so that the cut can be begun easily and a high tear speed can be achieved, followed by a second region of length D2', longer that D2, so as to obtain greater resistance to tearing.

16. The case as claimed in [any one of claims 11 to 15,] claim 11, characterized in that the perforated line comprises a third region having cut portions of a length D1" longer than D1'; and/or tear points of length D2" shorter than D2', so as to once again reduce the resistance to tearing.

20. The blank as claimed in [any one of claims 17 to 19,] claim 17, characterized in that the fourth leaf (5; 66; 91) or the end flap of the second leaf comprise at least one precut frangible portion (33; 92).

22. The blank as claims in [either one of] claim[s] 20 [or 21], characterized in that the precut frangible portions (28', 29'; 35, 37) lie on the same side as the first leaf (2) and in that each of said side flaps (17', 18'; 17", 18") of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

23. The blank as claimed in [any one of claims 17 to 23,] claim 17, characterized in that the fourth join line (15, 18) is in the form of a cap astride the fold line between the first leaf and the adjacent panel.

24. The blank as claimed in [any one of claims 17 to 23,] claim 17, characterized in that the precut frangible portion (33, 92) of the fourth leaf (5, 91) and the precut fourth join line (15, 85) are each respectively associated with the hollowed-out part (16, 34) in the blank allowing grasping so that a user can perform tearing.

CARDBOARD CASE AND BLANK WITH TEAR-OFF WALL

The present invention relates to a packing case made of cardboard or corrugated cardboard formed from a one-piece blank and comprising a tear-off wall.

It also relates to a blank for obtaining such a packing case and to a perforating blade for partially precutting the join lines for joins to such a tear-off wall.

It finds a particularly important, although not exclusive, application in the field of packing for rigid products (jar, tins, etc.) or semirigid products (bags, etc.), allowing the products to be displayed easily outside their transport packing immediately, in a clean and attractive way, particularly on the shelves of superstores.

Packing cases allowing swift detachment of the upper part of the case from the lower part that forms a tray, allowing the contents of the packing to be displayed quickly in said tray are already known (EP 0 637 548).

Such a case is, however, obtained from two different blanks stuck together and has the disadvantage of not

allowing all the products in the packing to be removed quickly, easily and fully so that they can be lined up on a shelf.

A box formed of a blank with an opening at the top which is obtained by manually tearing off the lid, and with a reinforced handle, is also known (US-A-3,533,549). Such a rigid box does not allow the product it contains to be removed easily so that it can be placed on shelves.

The present invention aims to provide a blank and a case which are better than previously known ones at meeting the requirements of common practice particularly in that it allows complete removal of the packing through a few simple movements allowing impeccable display on shelves in stores.

In addition, the invention allows automatic construction at a high rate (in excess of twenty cases/min), the cases obtained being very robust and also being easy to stack on pallets.

It also makes it possible better than previously to guarantee cutting which is perfectly controlled, easy and 100% reliable, while at the same time allowing

optimized strength in the tear region so as to prevent any accidental risk of tearing the attachment points, for example as the result of an impact on the weakened region or a violent movement of the products inside the packing.

This improvement proves particularly beneficial in the case of perforations made on the periphery of one full face of the packing, for which the risk of initiating

the precut parts is high, especially on the middle of the edges of the face where the load is highest.

To this end, the present invention proposes in particular a case made of material in the form of a sheet of cardboard or corrugated cardboard, characterized in that it is formed from a single blank and in that it comprises a side wall designed so that it can be fully torn off by hand by a user.

To do this, join lines are provided between the wall formed by a tear-off panel and the other adjacent panels (bottom, lid, and adjacent side walls), which are fully precut.

A precut join line between two panels, a panel being formed by a leaf or by one or more flaps of the blank, is to be understood as meaning a join line consisting of a few attachment points or parts attaching the two panels together, which makes the two panels easy to detach from one another by tearing along the join line, combining pulling at right angles to the line with progressive detachment of the attachment points one after the other.

The precut join lines are thus designed to offer good resistance in the direction of the line and/or as long as tearing has not been begun.

Advantageously, a hard point makes it possible to avoid starting the tear on each side of the line and/or at the middle.

Likewise, and in that which follows, a precut frangible portion is to be understood as meaning a frangible portion which is held only by a few points or attachment parts to the remainder of the blank and which can therefore be easily detached from the blank by pulling at right angles to the plane of the blank (a pulling force of a few newtons, for example from 5 to 10 N).

Thus, the precut portion and/or the precut lines are designed to offer good resistance in the vertical direction as long as the forces are exerted essentially in the plane of the walls. This resistance is, in particular, high enough to allow the products to be transported even if the packing is grasped by the upper part.

Conventionally, the precut lines are obtained by perforating the cardboard in a dotted line using

cutting blades known as "perforating rules". The dotted lines are therefore defined by a regular alternation of perforated lines known as "cuts" and unperforated lines known as "attachment points".

The distance separating two attachment points, in other words the length of the cut, is termed D1, while the distance separating two perforated cutting lines, in other words the length of an attachment point, is known as D2.

A perforating profile is thus commonly denoted by a series of two figures corresponding to D1 and D2, separated by a dot. The values D1 and D2 are always constant and on one and the same cutting line.

For example, an 8.3 perforated line will consist of an alternation of cuts 8 mm long and of attachment points 3 mm long.

In this instance, as the path followed by the dotted lines has also to act as a fold line, the perforating rules also have a scoring function, that is to say that between the perforations, the attachment points are crushed by deeper perforating rules so as to make subsequent folding about the line concerned easier.

Just like the simple cutting blades or rules or scoring rules, the perforating blades are generally made of steel, and are driven over part of their height into a wooden form which gives them rigidity against lateral deformation as they are pressed onto the cardboard that is to be cut.

The difficulty in choosing a perforating rule consists in selecting the one that makes it possible to obtain tearing that is easy, quick and clean for the operator while at the same time avoiding accidental rupture of the attachment points for any other reason.

Thus, it is as a function of the nature of the grammage of the papers and of the thickness of the corrugated cardboard that the person skilled in the art will vary the values D1 and D2 until he finds the best possible compromise.

The higher the value of D2, the more energy will be required for tearing.

Likewise, the lower the value of D1, the more tear points there will be over a defined distance, and the greater the energy will be.

However, beyond a certain value of D2, there is a risk that the tearing will not follow the anticipated path but will, on the other hand, diverge from it, to the considerable detriment of the appearance of the cut.

The graph in Figure 1 for example depicts the variation in tear force for an attachment point as a function of the length of the attachment point in millimeters for a given type of cardboard.

The tear regions of the prior art did not always manage to reach a satisfactory compromise between ease of tearing and resistance.

In one advantageous embodiment, the present invention therefore proposes to create join lines that can vary over one and the same length of perforated line, this being by taking advantage of the fact that the tearing moment applied to the region that is to be torn varies according to the angle between the force applied and the wall bearing the attachment points, and that the energy transmitted to the attachment point is dependent on the speed at which the movement is applied.

These regions of variable resistance are obtained by varying the distances D1 and D2 along one and the same line.

Thus, it is possible to start one end of a dotted line with a long distance D1 and a short distance D2 so that the cut can be begun easily and a high speed can be achieved toward the middle of the dotted line, then, as the middle is approached, D1 is gradually reduced while D2 is increased so as to obtain greater resistance to tearing, then finally D1 is increased again while D2 is decreased as the other end of the dotted line is approached.

The invention thus also proposes a packing case made of a sheet of cardboard or corrugated cardboard comprising a tear-off wall equipped with partially precut join lines forming a perforated line exhibiting cut portions of length D1 separated each from the next by attachment points of length D2, characterized in that at least one of the lengths D1 and D2 varies along said perforated line.

The invention also proposes a packing case formed from a single blank of material in the form of a sheet of cardboard or corrugated cardboard, comprising a first vertical wall connected by join lines to the bottom wall, top wall and adjacent side walls of the case, characterized in that said join lines are precut and in that the vertical wall opposite the first wall is secured to the bottom wall via at least one precut

frangible portion that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck manually simply by pulling.

The expression "detachable simply by pulling" is to be understood as being detachable by separating by hand, this being obtained by exerting a force at right angles to the walls.

As already mentioned, the partially precut portion or portions and/or the spots of adhesive are arranged so that they exhibit good resistance in the vertical direction, that is to say as long as the forces are exerted essentially in the plane of the walls.

If, on the other hand, the separating force exerted between the walls is very much at right angles to the walls, these can then easily be detached by hand, without peeling of the cardboard, for example with a force of the order of 5 to 10 newtons, advantageously and for example after passing through a hard point involving an additional effort of a few newtons on the part of the user, for example using his thumb to push back and/or exert leverage to pass through this hard point.

In addition, it should be noted that as long as the first side wall of the case has not been torn off manually by the user, the case maintains its rigidity, which means there can be no parting or gaping encouraging a risk of beginning tearing, this risk being moreover advantageously also allayed through the hard point mentioned hereinabove.

Advantageously, the invention also proposes a cutting blade for a material in the form of a sheet of cardboard or corrugated cardboard, comprising a perforating rule having cutting portions of length D1 separated each from the next by recessed portions of length D2, characterized in that at least one of the lengths D1 and D2 varies along said perforating rule.

Advantageously, the perforating rule has a first region with cutting portions of a first length D1 known as a long length, followed by a second region of length D1' shorter than D1.

Also advantageously, the cutting blade is designed to allow the formation of precut lines of the type described hereinabove.

In some advantageous embodiments, recourse is also had to one and/or other of the following provisions:

- the side walls adjacent to the first wall are secured to the bottom wall via at least one, for example essentially rectangular, precut frangible portion that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck manually simply by pulling;

- the walls of the case being formed by leaves and/or flaps of the blank, the precut frangible portions are cut along a line which is open with respect to the edge of the corresponding leaf and/or flap.

The invention also proposes a blank making it possible to obtain the case as described hereinabove.

The invention also proposes a blank made of material in the form of a sheet of cardboard or corrugated cardboard for manufacturing a parking case of the type comprising at least four rectangular leaves, said rectangular leaves comprising a first leaf intended to form a first side wall of the case connected by a first join line to a second leaf intended to form the bottom of the case and, respectively, by second, third and fourth join lines to adjacent panels formed by one or more flaps and at least a third leaf, and a rectangular fourth leaf intended to form a second side wall of the case opposite the first wall, characterized in that the second leaf comprises two side flaps and an end flap,

in that the first, second, third and fourth join lines are precut and in that the fourth leaf or the end flap of the second leaf comprise at least one precut frangible portion.

In some advantageous embodiments, recourse is further had to one and/or other of the following provisions:

- the second and third join lines are fold lines connecting the first leaf to adjacent flaps intended at least partially to form side walls of the case and the fourth join line is a line connecting the first leaf to a third leaf intended to form the top of the case;
- the second and third join lines are fold lines connecting the first leaf to two adjacent leaves intended to form the walls of the case and the fourth join line is a line connecting the first leaf to a top flap intended at least partially to form the top of the case;
- the side flaps of the second leaf are each respectively equipped with a, for example roughly rectangular, precut frangible portion;
- the precut frangible portions of the two side flaps of the second leaf are cut along an open line with one side completely open to the outside of said flaps;
- the precut frangible portions of the two side flaps of the second leaf lie on the same side as the first leaf;

- each of the side flaps of the second leaf comprises at least one additional precut frangible portion;

- the fourth join line is in the form of a cap astride the fold line between the first leaf and the adjacent panel;

- at least one of the precut frangible portion of the fourth leaf and of the fourth precut join line, is respectively associated with grasping means, for example comprising a hollowed-out part in the blank allowing a user to perform the tearing-off.

The invention will be better understood from reading the description which follows of some embodiments which are given by way of nonlimiting examples. The description makes reference to the accompanying drawings in which:

- Figure 1 is a plan view of a blank according to a first embodiment of the invention.

- Figure 2 is a plan view of another embodiment of the flaps of the second leaf of the blank of figure 1.

- Figure 3 is a plan view of another embodiment of the flaps of the second leaf of the blank of figure 1.

- Figure 4 is a skeleton diagram of the forming then opening out of a packing case using the blank of figure 1, prejoined.

- Figure 5 is a plan view of a width of cardboard continuously cut to form blanks according to figure 1.

- Figure 6 is a plan view of another embodiment of a blank according to the invention.

- Figure 7 is a skeleton diagram of the formation of a packing case from the blank of figure 1, by wrapping the blank around the load.

- Figure 8 is a plan view of another embodiment of the blank according to the invention.

- Figure 9 is a skeleton diagram of the formation of a case from a blank of the type described with reference to figure 8.

- Figure 10 is a curve showing the variation of the tear force of an attachment point for a particular type of cardboard.

- Figure 11 shows a cutting blade according to one embodiment of the invention and a wall of packing after cutting.

- Figure 12 shows a cutting blade with a progressive profile in another embodiment of the invention.

In the remainder of the description, the same reference numerals will be used to denote the same elements.

Figure 1 shows a blank 1 made of double-sided corrugated cardboard, for example 3 mm thick. The blank is formed of a succession of four rectangular leaves 2, 3, 4 and 5 connected together by fold lines.

More specifically, the succession comprises a first leaf 2 intended to form a side wall of the case, connected by a first join line 6, coincident with a fold line between leaves, to a second leaf 3 intended to form the bottom of the case and, respectively, by a second join line 7 and a third join line 8 which also form fold lines to two rectangular or roughly rectangular adjacent flaps 10 and 11.

The first leaf 2 is also connected to a third rectangular leaf 4 by a fourth join line 9 consisting of a line in the form of a hat. The line 9 straddles the fold line 12 parallel and on the opposite side to the fold line 6, to form the opposite edge of the case.

The remainder comprises a fourth rectangular leaf intended to form the wall of the case opposite the first wall 2.

Each of the first, second, third and fourth join lines (6, 7, 8, 9) are precut according to the invention.

The join line 9 makes it possible to determine two rectangular or trapezoidal leaf parts 13 and 14 lying one on each side of a central portion 15 of trapezoidal shape straddling the line and comprising a part

situated on the third leaf 4, ending in an aperture or opening 16 made in said third leaf intended to form the top of the case.

The line 15 therefore has the shape of an Ω or of a hat.

The opening is, for example, rectangular and/or triangular and allows the user to slip in one or more fingers so as to tear off the first wall formed by the first leaf 2.

Each of the leaves 3, 4, and 5 also has, on each side of and in the continuation of the two flaps 10 and 12 of the first leaf 2, rectangular or roughly rectangular flaps 17, 18; 19, 20 and 21, 22 respectively able to collaborate once the case has been made up, with the flaps of the first leaf so as to form open-work opposed side walls of the case.

The second leaf 3 comprises, on the opposite side to the first leaf, a set 23 of three rectangular or roughly rectangular flaps, namely a central flap 24 connected to the second leaf via a fold line 25 and two small end flaps 26 connected respectively by fold lines 27 lying in the continuation or roughly in the

continuation of the fold line 25, to the two side flaps 17 and 18 of the second leaf 3.

These two side flaps 17 and 18 each respectively and for its own part comprises, on the same side as the first leaf 2, a precut frangible portion 28, 29 precut along an open line with a side 30, 31 entirely open toward the outside of the flaps on the one hand and toward the first leaf on the other.

The fourth leaf 5 for its part comprises, on its outer edge 32 lying on the opposite side to the third leaf 4, a precut frangible portion 33 which is, for example, rectangular or trapezoidal, capable of collaborating with the central flap 24 of the second leaf 3.

This precut portion 33 is continued toward the leaf 5 by a recessed part 34 in said fourth leaf 5, for grasping the wall, to allow easy tearing once the blank has been made up to form packing.

Figures 2 and 3 depict other embodiments of the flaps of the second leaf 3 according to the invention.

Figure 2 thus shows a second leaf 3 equipped with two side flaps 17' and 18' each equipped with an end flap 26. The two flaps 17' and 18' are each equipped with

two rectangular or essentially rectangular partially precut portions 35 and 36, 37 and 38 which are symmetric in pairs with respect to the longitudinal axis 39 of the blank.

The portions 35 and 37 lie at the end of the flaps directed toward the first leaf 2 and are free on three sides.

The portions 36 and 38 lie on the same side as the other end of the flaps and are free on two sides, making it possible to form a part 39, 40 which is set back in the flap 17', 18' toward the leaf 3.

Figure 3 shows another embodiment of the flaps 17'', 18'' of the second leaf 3 according to the invention.

Each flap is equipped with two precut portions 28' and 29' of the same type as the parts 28 and 29 described with reference to figure 1, and two other precut parts 41 and 42 which are free only on the side coincident with the outer edge of the flap.

In this embodiment, the flaps 17'', 18'' are not equipped with small end flaps.

However, the central flap 43 of the leaf 3 has two small end flaps or tabs 44 which will be able to be folded down to form a case according to the invention.

This will now be described more particularly with reference to figure 4, which gives a skeleton diagram 45 of a first embodiment of the forming of the case obtained using the blank 1 described above.

Starting out from the blank 1 which is prejoined using the central flap 24 to the precut portion 33 of the fourth leaf 5, the blank is opened out at 46, then squared (step 47).

The load 48 is introduced sideways into the packing, as shown at 49, then the side flaps intended to form the side walls of the case are folded down having been previously coated for example with hot-melt adhesive, particularly the partially precut portions 28, 29, so as to form the case as shown at the end of formation at 50.

The case is then conveyed then taken, for example, into a supermarket.

The wall formed by the first leaf 2 is then torn off (step 51) manually by a user, something which the

latter can easily do given the precut join lines, then the packing is placed on the shelf (not depicted).

The lower part 52 forming the bottom is detached at the precut portions 28, 29 by pulling outward in the direction of the arrow 53 (step 54).

The shovel-shaped bottom 52 is then extracted from beneath by the user who pulls it, pushing the top or upper part 55 of the case and the load 48 back.

Finally, the upper part 55 of the case is removed so as to completely uncover the load 48 on the shelf.

Figure 5 shows a collection 56 of blanks 1, 1', 1'' as described with reference to figure 1, which can easily be manufactured from the same width of cardboard, continuously.

The precut join lines 6, 7, 8, 9 or connecting lines for precut portions 28, 29, 33 are obtained by perforating the cardboard in dotted lines using perforating cutting blades.

The dotted lines are therefore defined by an alternation of perforated lines and unperforated lines known as attachment points.

The distance separating two attachment points or, in other words, the length of cut being termed D1 and the distance separating two perforated lines, or in other words, the length of the attachment point being termed D2, a perforating profile is therefore defined by the two figures corresponding to D1 and D2.

Depending on the nature and grammage of the paper, and on the thickness of the corrugated cardboard, it is possible to vary the values of D1 and D2 until the best possible compromise is found to allow ease of tearing while at the same time keeping the packing sufficiently robust.

Advantageously, D1 and D2 are thus varied along the same precut line to create weaker points or hard points as indicated above.

Figure 6 shows another embodiment of blanks 57, 57' nestled together opposite ways round, manufactured continuously from the same width of cardboard.

The first leaf 58 here comprises two flaps 59 and 60 which are symmetric with respect to the longitudinal axis 61 of the blank and each of which is formed of a rectangular first part and of a trapezoidal or roughly triangular second part of greater height than the first

part located on the same side as the third leaf 62 and directed toward the outside of the blank.

The flaps 63, 64 of the second leaf which is intended to form the bottom of the packing, are small rectangular flaps located at the periphery of said second leaf. The two side flaps 63 are extended by a short tab 65, the central, end, flap 64 being, for example, of the same width as the side flaps 63.

The third leaf 62 and the fourth leaf 66 each comprise, on each side, two large rectangular or roughly rectangular flaps 67, 68 intended, when bonded together, and with the flaps of the first and second leaves, to form the other two side walls of the case.

Figure 7 depicts another way of forming packing from a blank 1 according to the invention.

In this case, the blank 1 is not prejoined as described with reference to figure 4, but is brought in flat (step 70).

The load 71 may be air-driven (embodiment not depicted), or conveyed from the side onto the blank (step 72) before the blank is folded up around the

package by wrapping, as depicted at 73, the load resting on the top of the packing or third leaf 4.

The packing is then completed as shown at 74 in figure 7, the flaps 10, 11; 21, 22 then 17, 18, 19, 20 being coated with adhesive then folded over, the second leaf 3 capable of forming the bottom of the packing being folded down onto the load, its central end flap 24 being bonded to the precut portion 33 of the fourth leaf 25 as indicated at 75.

Figure 8 depicts another embodiment of a blank 80 according to the invention comprising a first leaf 81 connected by first, second, third and fourth precut join lines 82, 83, 84, 85 respectively to a second leaf 86, a third leaf 87 and a fifth leaf 88, the second leaf 86 being intended to form the bottom of the case and being, for example, identical to the second leaf described with reference to figure 1.

The third and fifth leaves 87, 88 are, for their part, situated one on each side of the first leaf 81, to which they are connected by the second and third precut join lines which are coincident with the fold lines, the fourth join line 85 for its part straddling a fold line 89 connecting with a rectangular flap 90 to form portions identical to the portions 13, 14, 15 and a

recess identical to the recess 16 of the blank of figure 1.

A fourth leaf 91 is provided at the end of the fifth leaf 88 and comprises the precut portion 92 identical to the portion 33 according to the invention, which will be bonded onto the end flap 93 of the second leaf.

The fourth leaf additionally comprises an end tab 94 for bonding to the third leaf 87 (or conversely the tab may be on the third leaf and be bonded to the fourth), each of the third, fourth and fifth leaves comprising a roughly rectangular flap 95, 96, 97 of the same width as the flap of the first leaf and which are intended to form the top of the case. The flaps 95 and 97 are symmetric with respect to the first leaf 81 and comprise, for example, a cut-out at the corner located on the same side as the flap 90 of the first leaf, of a shape that complements the portion 15.

Figure 9 depicts the forming of a case 98 according to the invention from a blank 80 of the type described with reference to figure 8.

The blank is first of all brought in flat then preformed into a ring, the tab 94 being bonded to the third leaf 87, the bottom 86 of the case being brought

up then bonded. The case is then tipped open (step 99), the load 100 then being introduced before the flaps 90, 96 then 95, 97 are closed to form the top of the case.

Figure 10 shows a curve 101 giving the variation in tear force of an attachment point for a profile 10.D2 namely with D1 = length of cuts of 10 mm, and D2 = length of the attachment point (mm) along the x-axis and the rupture force (N) along the y-axis, for a corrugated cardboard of type PC 2T30C090 T140 and a total grammage for the cardboard of 410 g/mm^2.

It can be seen that for D2 = 3 mm, the force is 9.3 N, for D2 = 4 mm, it is 12.6 N, etc.

From these values and from values from other similar curves, those skilled in the art will be able to meter the tearing force to suit the requirement.

Figure 11 shows a panel 103 made of two-sided corrugated cardboard, for example 3 mm thick according to one embodiment of the invention, with a partially precut line 104, comprising a first region 105 and a second region 106.

The region 105 comprises cut portions 107 of a first length D1, and attachment points 108 of a first length D2. The second region 106 comprises cut portions 109 of

a second length D1' shorter than D1, for example half as long, and attachment points 110 of the same length D2 as the attachment points 108.

Figure 11 also shows the straight cutting blade 111 comprising a perforating rule 112 of a shape designed to cut the partially precut line 104 and fixed to a rigid support 113 removably so that it can be changed easily.

Figure 12 gives an enlarged side view of another embodiment of the cutting blade 114 according to the invention.

The blade comprises a straight perforating rule which here comprises four regions, of progressive difficulty of tearing, namely a first region 115 which is easy to tear, a second region 116 which is not as easy to tear, a third and fourth region 117 and 117' which are difficult to tear without any impetus.

The first region 115 is equipped with cutting portions 118 of a length of, for example, 15 mm, and rectangular recessed portions 119 to form the attachment points, of length of 5 mm.

The second region 116 comprises cutting portions 118' of 10 mm and identical recessed portions 119.

The third region 117 comprises cutting portions 118'' of a third length of 6 mm, and recessed portions 119 still of 5 mm, and finally, the fourth region 117' comprises cutting portions 118'' of 6 mm and recessed portions 119' of 16 mm.

As goes without saying and as is also evident from the foregoing, the present invention is not restricted to the embodiments more particularly described. On the contrary, it encompasses all alternatives thereof, particularly those in which the precut portions belong, in part, to the flaps of the first rather than of the second leaf.

CLAIMS

1. A case made of material in the form of a sheet of cardboard or corrugated cardboard, formed from a single blank and comprising a panel at least partially forming a first side wall (2, 58, 81), said panel or said first wall being designed to be able to be torn off completely by hand by a user, being connected by precut join lines (6, 7, 8, 9; 82, 83, 84, 85) to the first wall and/or to the adjacent walls of the case, said adjacent walls comprising two side walls or two parts of side walls and a wall known as the bottom wall of the case,

characterized in that the side walls or portions of side walls (10, 11; 59, 60; 87, 88) adjacent to the first wall (2, 58, 81) are secured respectively to the bottom wall (3, 86) or to flaps (17, 18) connected to the bottom wall, via at least one precut frangible portion (28, 29; 28', 29'; 35, 37; 41, 42) that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck by hand, simply by pulling.

2. The case as claimed in claim 1, characterized in that the precut join lines are at least partially formed by fold lines.

3. The case as claimed in any one of the preceding claims, characterized in that, the walls of the case being formed by leaves and/or flaps of the blank, the precut frangible portions are cut along a line which is open with respect to the edge of the corresponding leaf and/or flap.

4. The case as claimed in any one of the preceding claims, characterized in that the wall opposite the first wall is secured to the bottom wall (3, 86) or to a flap (24, 64, 93) connected to the bottom wall, via at least one precut frangible portion (33, 92) that can be detached simply by pulling and/or one or more spots of adhesive that can be unstuck manually simply by pulling.

5. The case as claimed in claim 4, characterized in that the single blank comprises at least four rectangular leaves, namely a first leaf (2, 58, 81) intended to form the first wall of the case connected by a first join line (6, 82) to a second leaf (3, 86) intended to form the bottom wall of the case and, respectively, by second, third and fourth join lines (7, 8, 9; 83, 84, 85) to adjacent panels forming one or more flaps (10, 11; 90) and at least one rectangular third leaf (4; 62; 87; 88) and a rectangular fourth

leaf (5; 66; 91) intended to form the wall opposite the first wall of the case,

and in that the second leaf (3) comprises two side flaps (17, 18; 17', 18'; 17'', 18''; 63) and an end flap (24; 43; 64; 93), the fourth leaf (5; 66; 91) or the end flap (24; 43; 64; 93) of the second leaf comprising the precut frangible portion (33; 92).

6. The case as claimed in claim 5, characterized in that the second and third join lines (7, 8) are fold lines connecting the first leaf (2) to adjacent flaps (17, 18) intended at least partially to form the adjacent side walls of the case and the fourth join line (9) is a line connecting the first leaf (2) to a third leaf (4; 62) intended to form the top wall of the case.

7. The case as claimed in claim 5, characterized in that the second and third join lines (83, 84) are fold lines connecting the first leaf (81) to two adjacent leaves (87, 88) intended to form the adjacent walls of the case and the fourth join line (85) is a line connecting the first leaf to a top flap (90) intended to at least partly form the top wall of the case.

8. The case as claimed in any one of claims 5 to 7, characterized in that the precut frangible portions (28', 29'; 35, 37) are situated on the same side as the first leaf (2) and in that each of the said side flaps (17', 18'; 17'', 18'') of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

9. The case as claimed in any one of the preceding claims, characterized in that the fourth join line (9, 85) is in the form of a cap astride the fold line (12) between the first wall and the top wall of the case.

10. The case as claimed in any one of the preceding claims, characterized in that the first wall and the opposite wall are associated with a hollowed-out part of the blank allowing a user to perform the tearing-off.

11. The case as claimed in any one of the preceding claims, characterized in that at least one precut join line forms a perforated line exhibiting cut portions of length D1 separated each from the next by attachment points of length D2, at least one of the lengths D1 and D2 varying along said perforated line.

12. The case as claimed in claim 11, characterized in that the perforated line is of rectilinear shape.

13. The case as claimed in claim 11, characterized in that the perforated line is of curved shape or has at least one corner.

14. The case as claimed in any one of claims 11 to 13, characterized in that the perforated line has a first region with cut portions of a first length D1 said to be a long length, so that the cut can be begun easily and a high tearing speed can be achieved, followed by a second region of length D1', shorter than D1, so as to obtain greater resistance to tearing.

15. The case as claimed in any one of claims 11 to 14, characterized in that the perforated line has a first region with tear points of a first length D2 said to be a short length, so that the cut can be begun easily and a high tear speed can be achieved, followed by a second region of length D2', longer than D2, so as to obtain greater resistance to tearing.

16. The case as claimed in any one of claims 11 to 15, characterized in that the perforated line comprises a third region having cut portions of a length D1''

longer than D1';, and/or tear points of length D2'' shorter than D2', so as once again to reduce the resistance to tearing.

17. A blank (1, 1', 1''; 57, 57'; 80) made of material in the form of a sheet of cardboard or corrugated cardboard for manufacturing a case comprising at least four rectangular leaves, said rectangular leaves comprising a panel at least partially forming a first leaf (2, 58, 81) intended to form a first side wall of the case, said panel being connected by a first join line (6, 82) to a second leaf (3, 86) intended to form the bottom of the case and, respectively, by second, third and fourth join lines (7, 8, 9; 83, 84, 85) to adjacent panels formed by one or more flaps (10, 11; 90) and at least a third leaf (4; 62; 87, 88), and a rectangular fourth leaf (5; 66; 91) intended to form a second side wall of the case opposite the first wall,

characterized in that the second leaf (3, 86) comprises two side flaps (17, 18; 17', 18'; 17'', 18''; 63) and an end flap (24, 43; 64; 93),

and in that the first, second, third and fourth join lines are precut,

and in that the side flaps (17, 18; 63) of the second leaf (3, 86) are each equipped respectively with a precut frangible portion (28, 29; 28', 29'; 35, 37).

18. The blank (1, 1', 1''; 57) as claimed in claim 17, characterized in that the second and third join lines (7, 8) are fold lines connecting the first leaf (2) to adjacent flaps (17, 18) intended at least partially to form side walls of the case and the fourth join line (15) is a line connecting the first leaf (2) to a third leaf (4; 62) intended to form the top of the case.

19. The blank (80) as claimed in claim 17, characterized in that the second and third join lines (83, 84) are fold lines connecting the first leaf (81) to two adjacent leaves (87, 88) intended to form the walls of the case and the fourth join line (85) is a line connecting the first leaf (81) to a top flap (90) intended at least partially to form the top of the case.

20. The blank as claimed in any one of claims 17 to 19, characterized in that the fourth leaf (5; 66; 91) or the end flap of the second leaf comprise at least one precut frangible portion (33; 92).

21. The blank as claimed in claim 20, characterized in that the precut frangible portions (28, 29; 28', 29'; 35, 37) of the two side flaps of the second leaf are

cut along an open line with one side completely open to the outside of said flaps.

22. The blank as claimed in either one of claims 20 and 21, characterized in that the precut frangible portions (28', 29'; 35, 37) lie on the same side as the first leaf (2) and in that each of said side flaps (17', 18'; 17'', 18'') of the second leaf (3) comprises at least one additional precut frangible portion (36, 38; 41, 42).

23. The blank as claimed in any one of claims 17 to 23, characterized in that the fourth join line (15, 18) is in the form of a cap astride the fold line between the first leaf and the adjacent panel.

24. The blank as claimed in any one of claims 17 to 23, characterized in that the precut frangible portion (33, 92) of the fourth leaf (5, 91) and the precut fourth join line (15, 85) are each respectively associated with a hollowed-out part (16, 34) in the blank allowing grasping so that a user can perform tearing.

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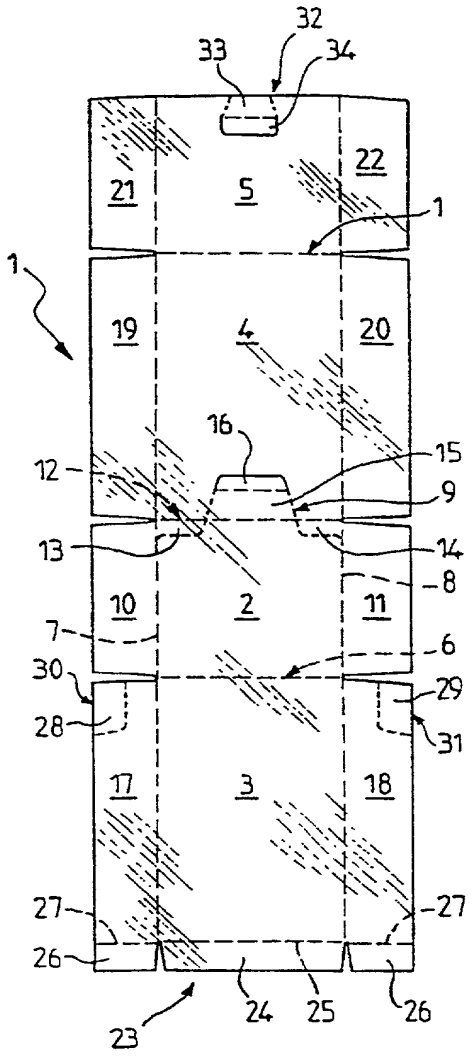

FIG.1

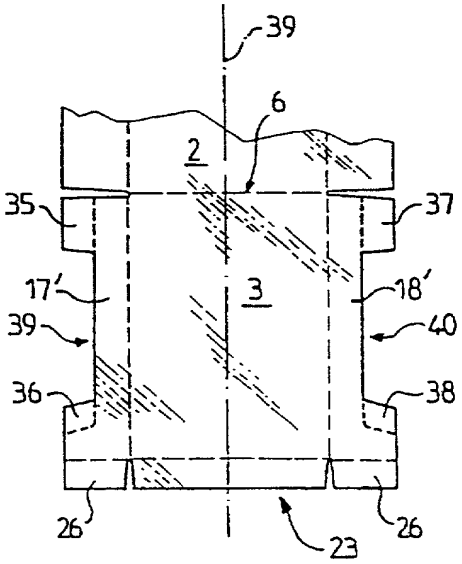

FIG.2

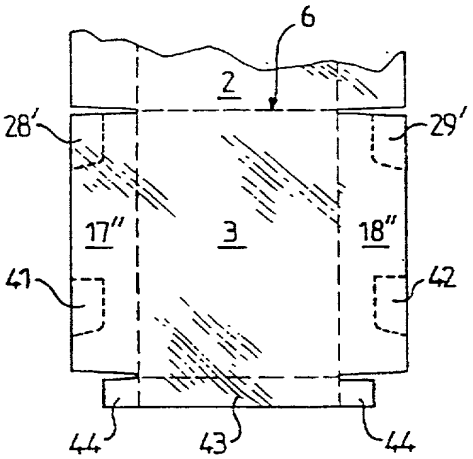

FIG.3

2/8

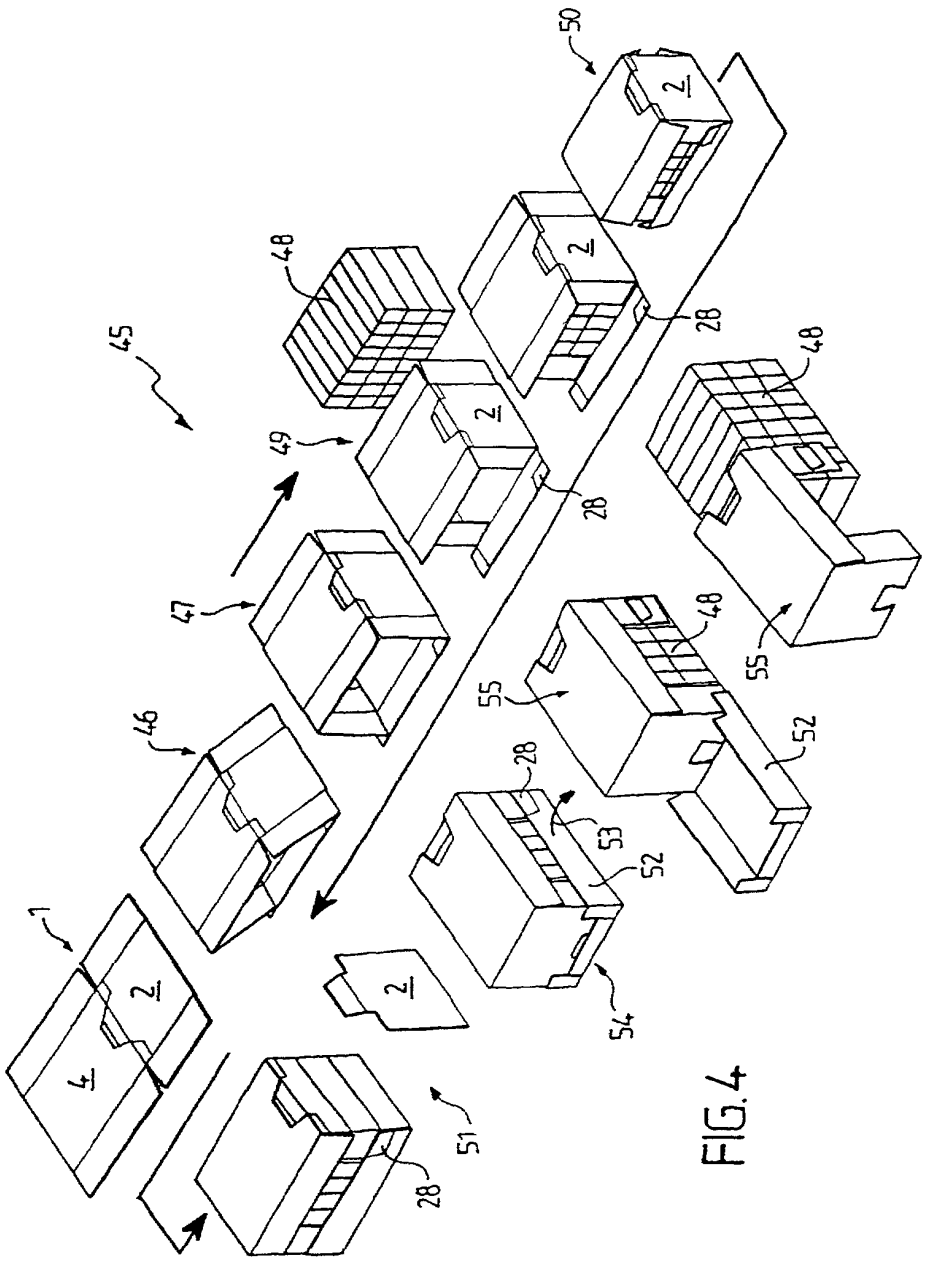

FIG.4

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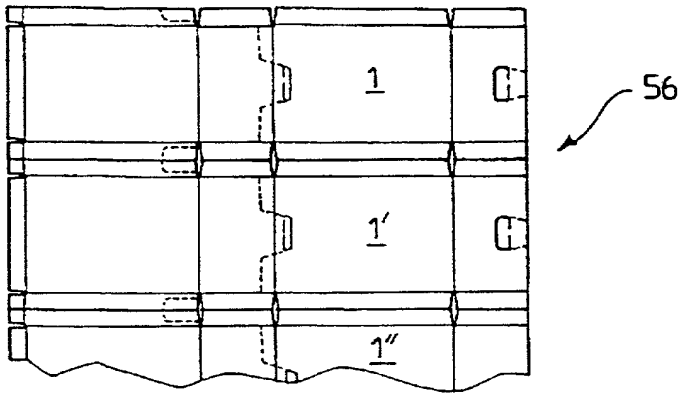

FIG. 5

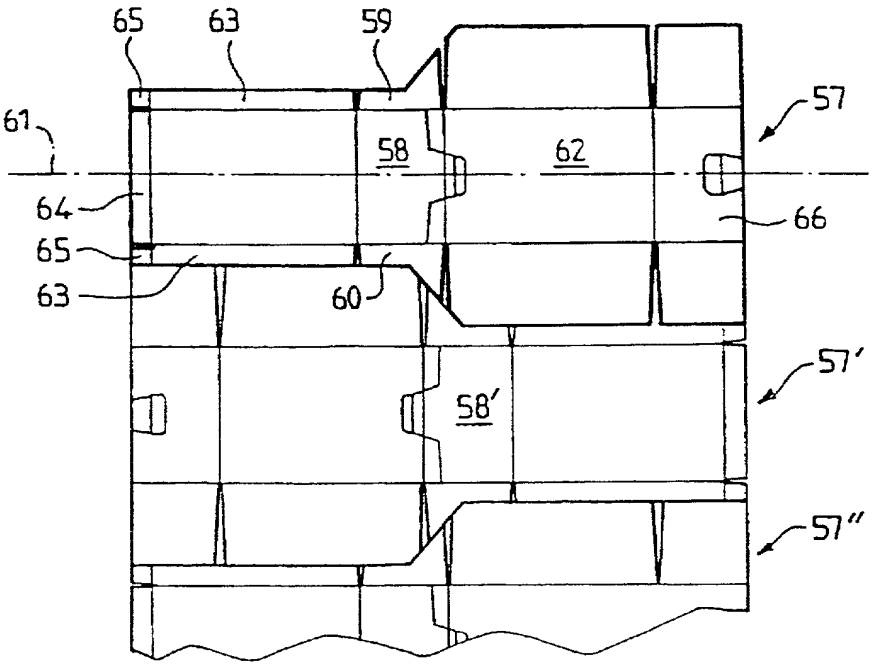

FIG. 6

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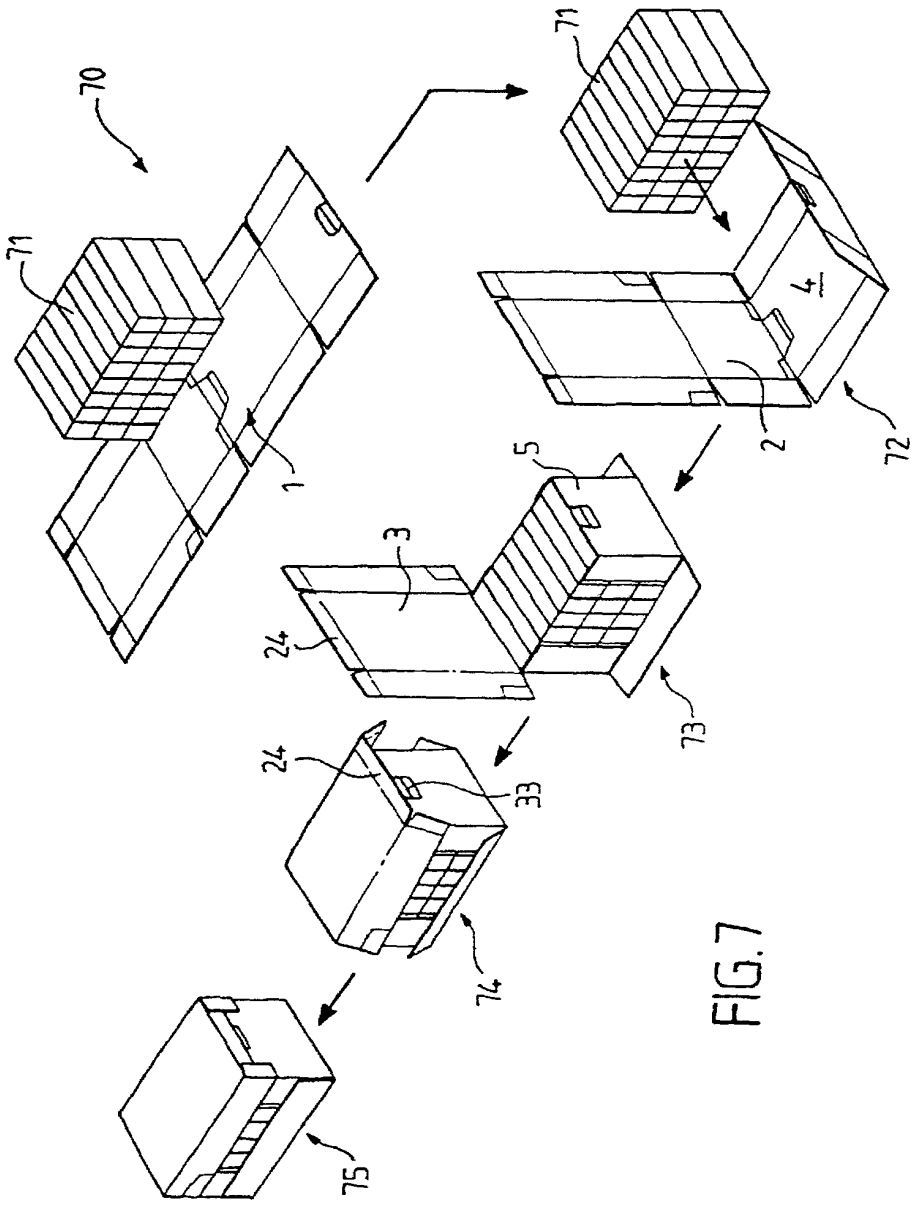

FIG.7

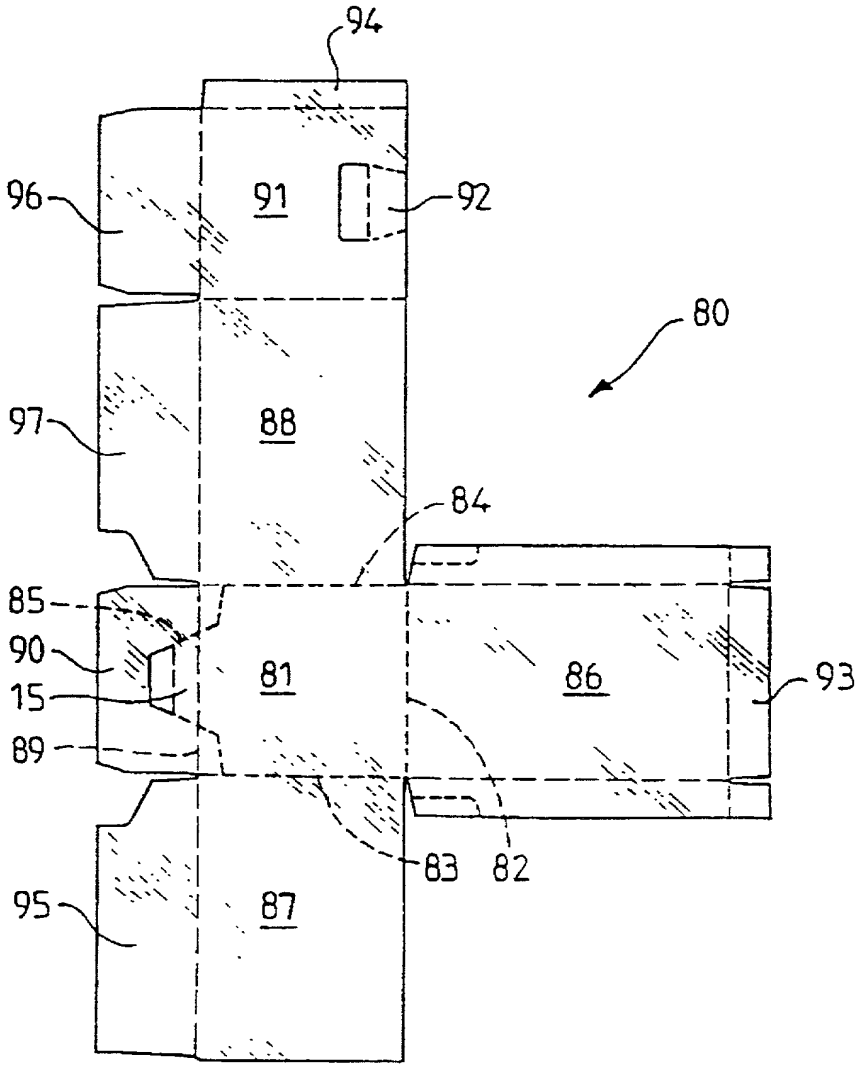

FIG.8

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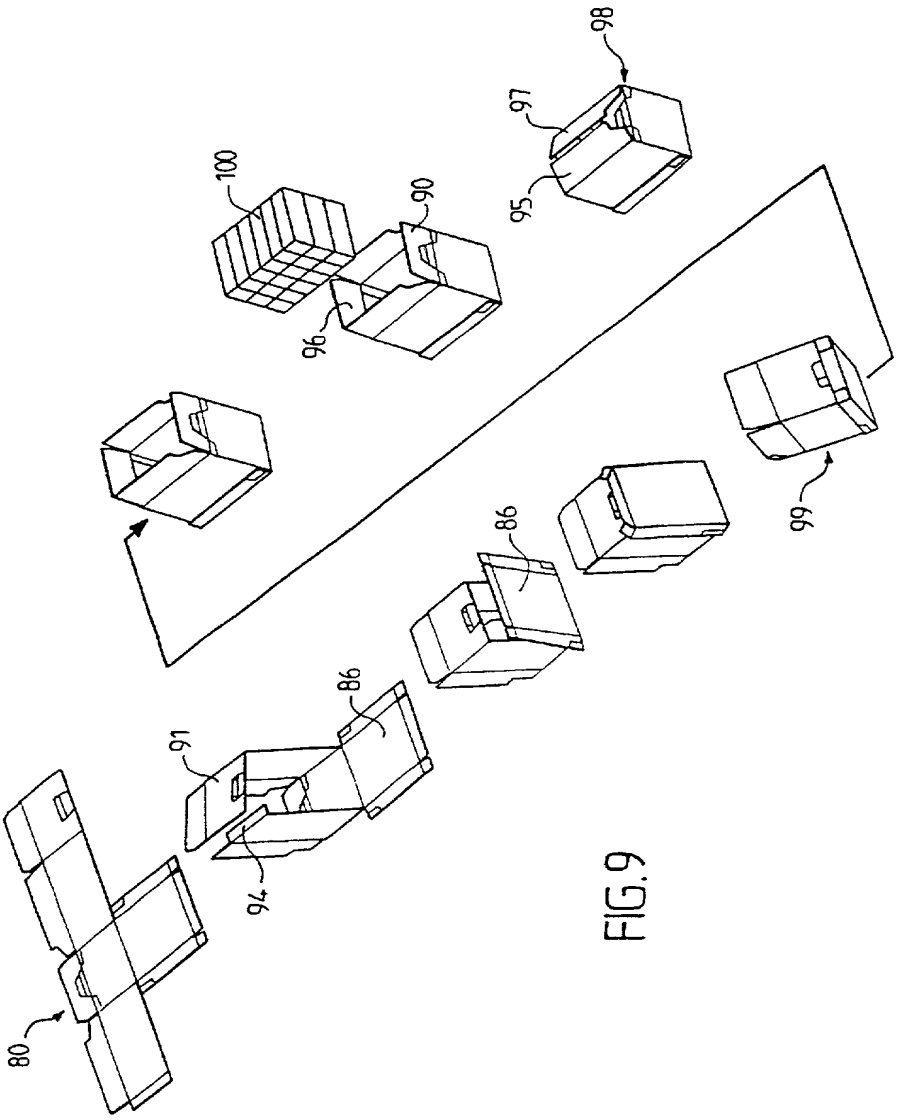

FIG.9

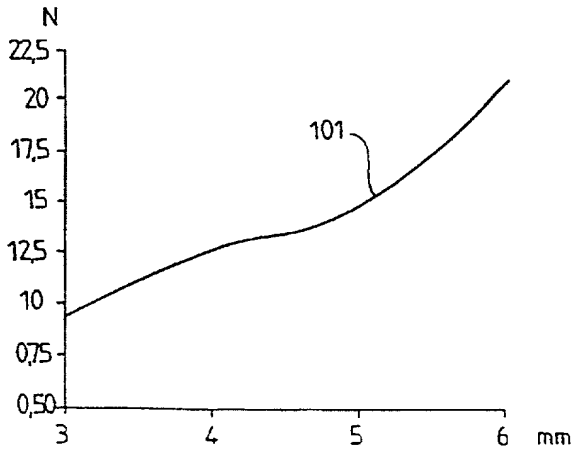
N
22,5
20
17,5
15
12,5
10
0,75
0,50
3
4
5
6
mm
101

FIG.10

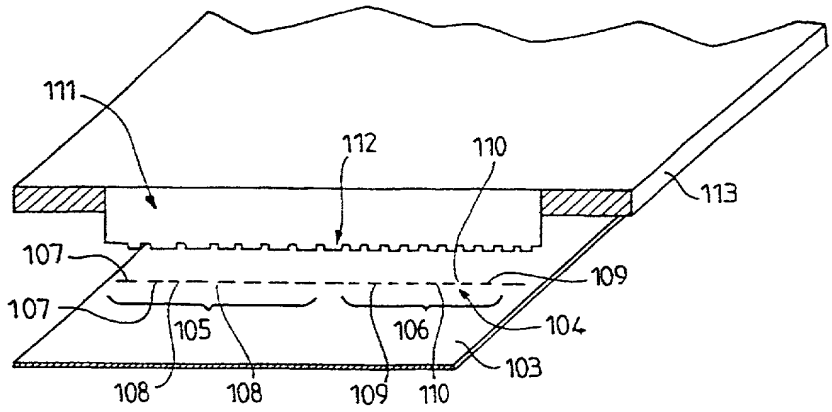
111
112
110
113
107
107
109
105
106
104
103
108
108
109
110

FIG.11

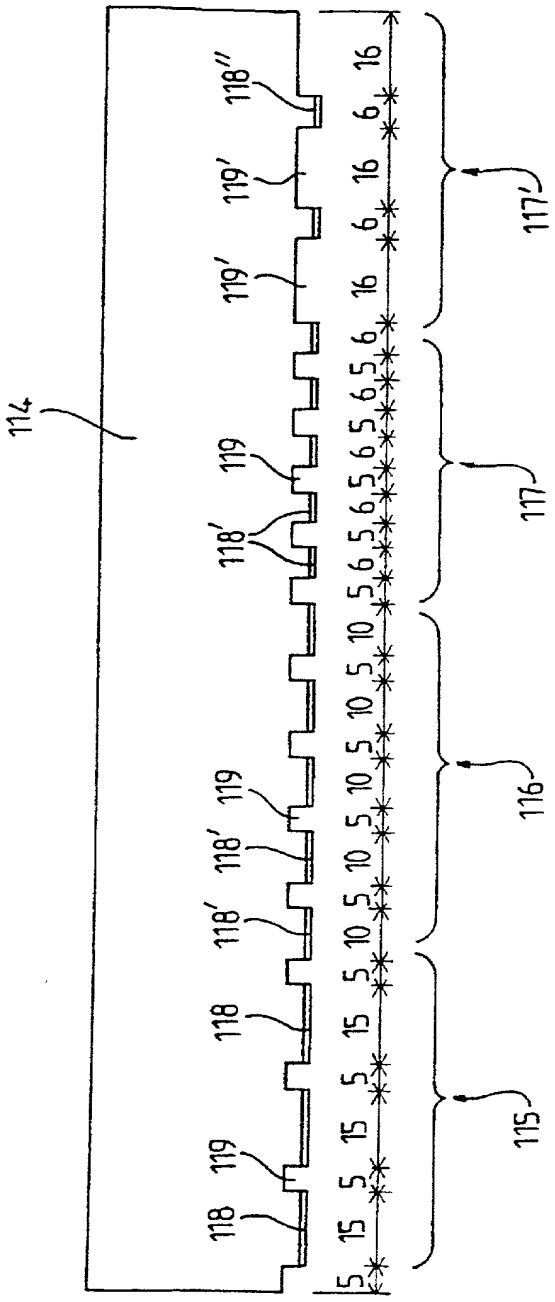
114
118''
119'
119'
119
118'
119
118'
118'
118
119
118
16
6
16
6
16
6
5
6
5
6
5
6
5
10
5
10
5
10
5
10
5
15
5
15
5
15
5
117'
117'
116
115
115

FIG.12

MERCHANT, GOULD, SMITH, EDELL, WELTER & SCHMIDT

United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventor are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

CARDBOARD CASE AND BLANK WITH TEAR6OFF WALL

The specification of which
a. ☐ is attached hereto
b. ☒ was filed on · as application serial no. PCT/FR00/01468 and was amended on (if applicable) (in the case of a PCT-filed application) described and claimed in international no. / filed May 29,2000 and as amended on / (if any), which I have reviewed and for which I solicit a United States patent. August 30, 2001

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

a. ☐ no such applications have been filed.
b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
FRANCE	99 07579	15/06/1999	
FRANCE	99 15704	13/12/1999	

ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application:

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent a Trademark Office connected herewith:

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I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosu to be represented unless/until I instruct Merchant, Gould, Smith, Edell, Welter & Schmidt to the contrary.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so mac are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1-00

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